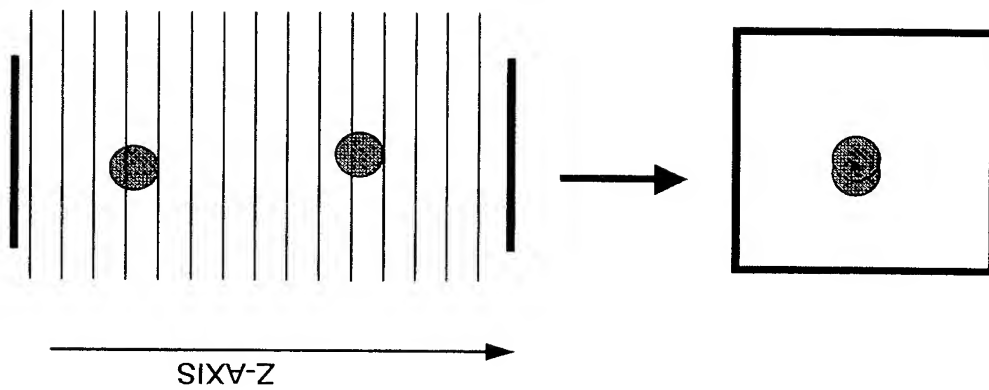


FIG. 1A



STACK OF CONFOCAL IMAGES

OUT-OF-FOCUS DOTS ARE  
VISIBLE IN NON-CONFOCAL  
IMAGES, RESULTING IN LARGE,  
BLURRED SIGNALS

NON-CONFOCAL IMAGE

FIG. 1B

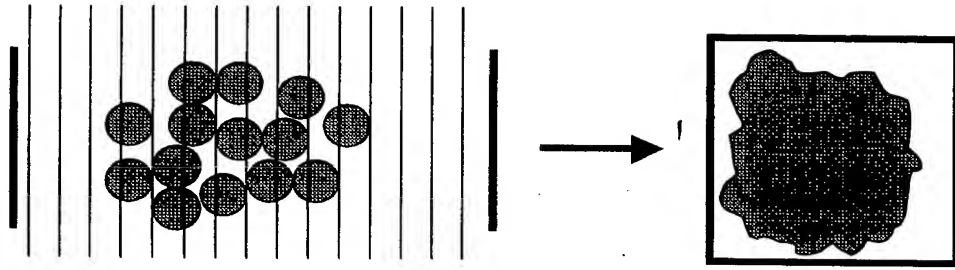


FIG. 2A

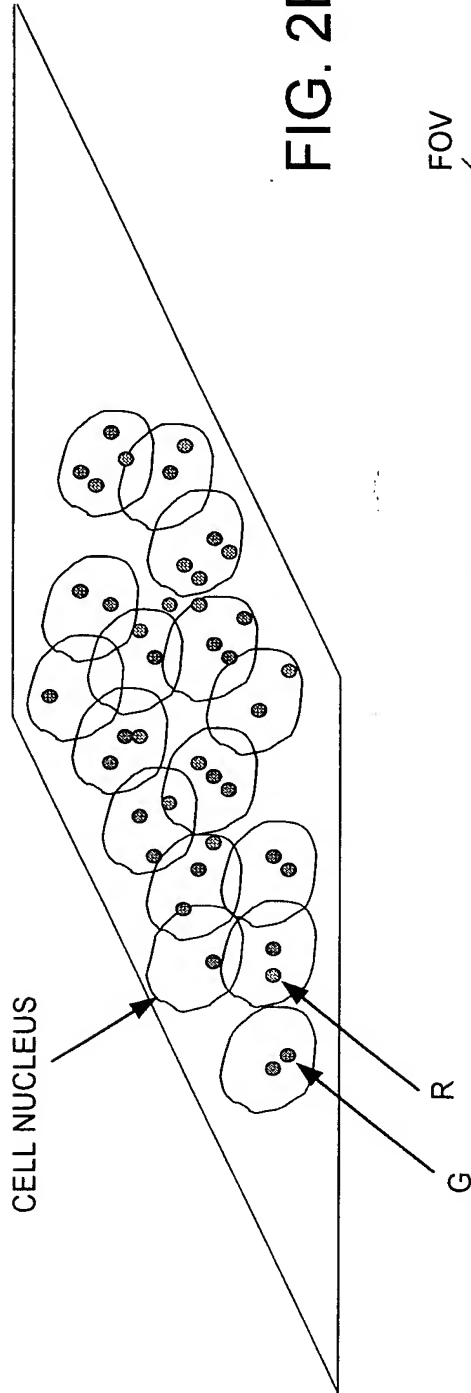
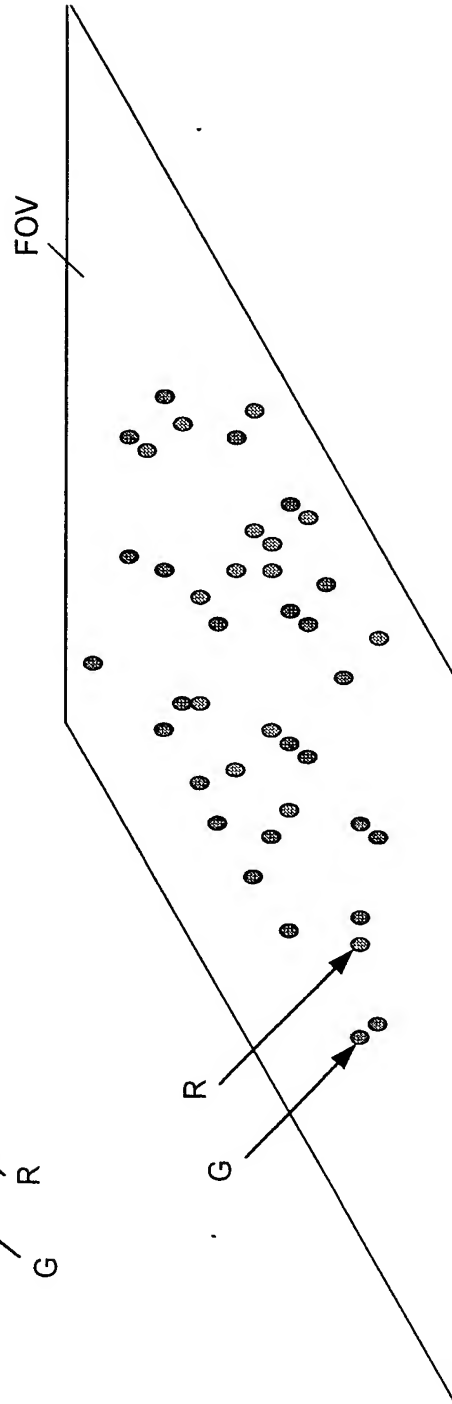


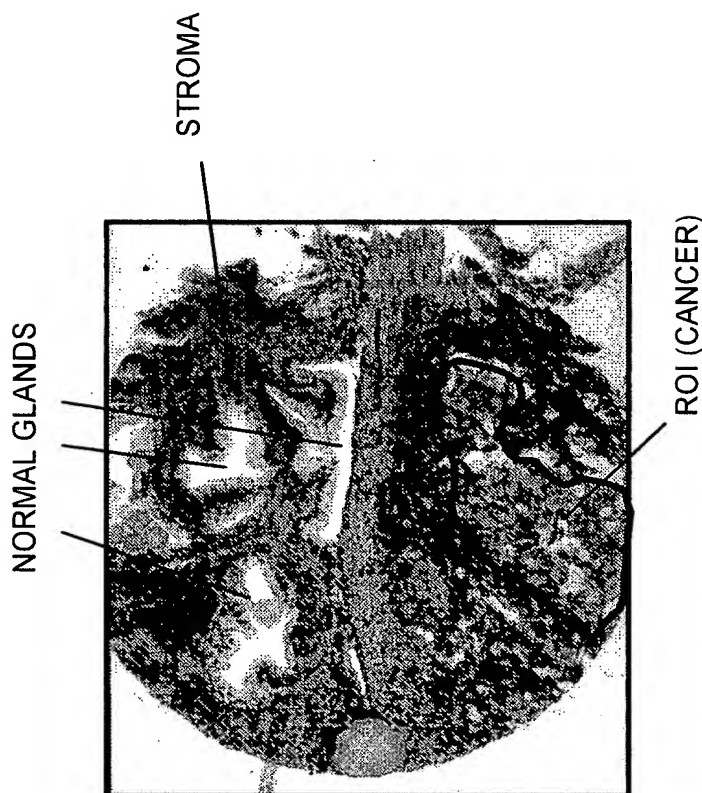
FIG. 2B



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FIG. 2C

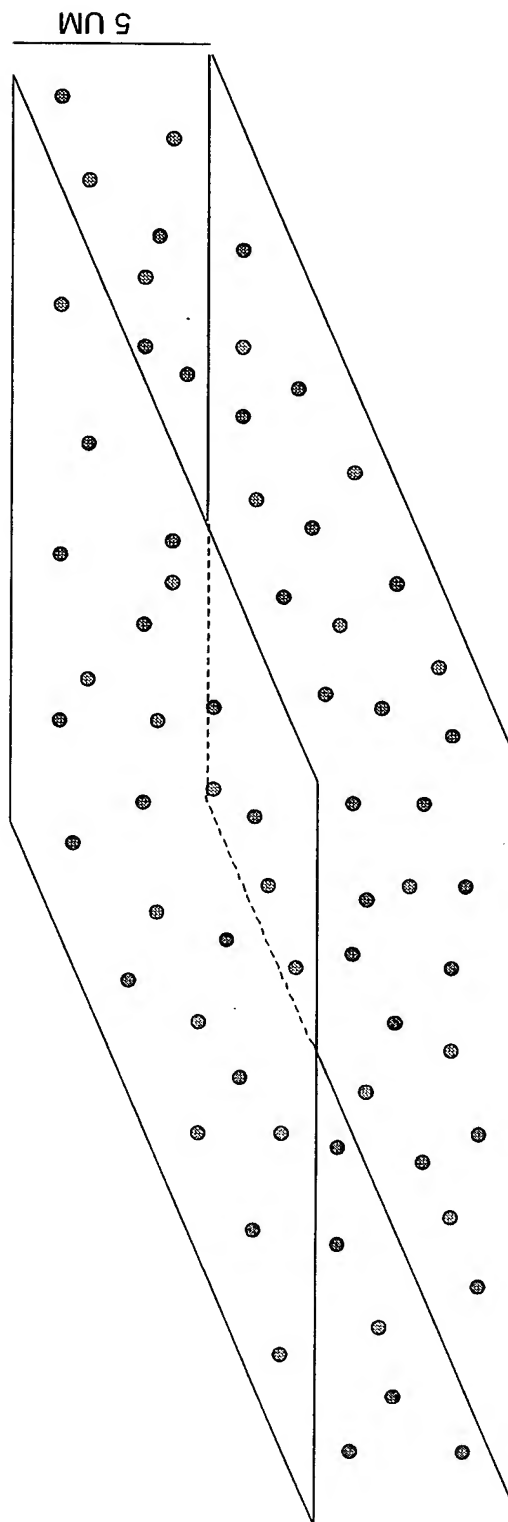
REGION OF INTEREST (ROI)



REGIONS OF INTEREST CAN DEFINE AN AREA WHICH IS SELECTED FOR A SPECIFIC ANALYSIS. IN THIS EXAMPLE OF A PROSTATE SPECIMEN ON A TISSUE MICROARRAY (H&E STAINING, X100), ONLY THE AREA CONTAINING CANCER TISSUE WILL BE SELECTED FOR FISH ANALYSIS. STROMAL TISSUE AND NORMAL GLANDS WILL BE EXCLUDED.

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FIG. 3



RED/GREEN PROBE SIGNAL RATIOS ARE FORMED BY DOT IDENTIFICATION AND  
COUNTING FROM BOTH COLOR CHANNELS FROM CONSECUTIVE SERIES OF CONFOCAL  
MICROSCOPE IMAGES

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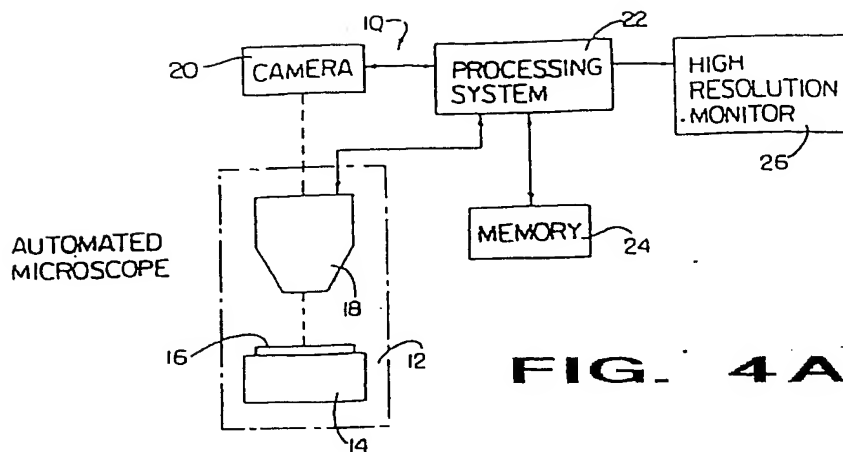


FIG. 4A

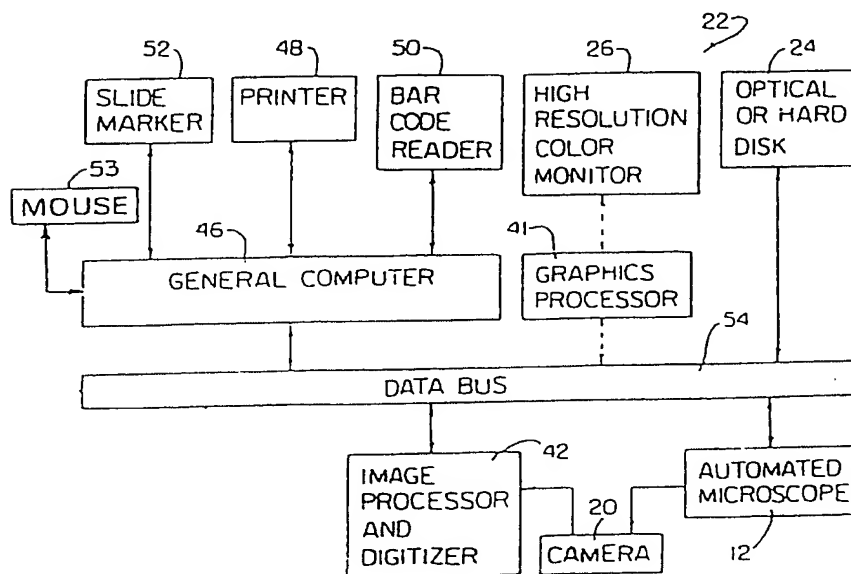
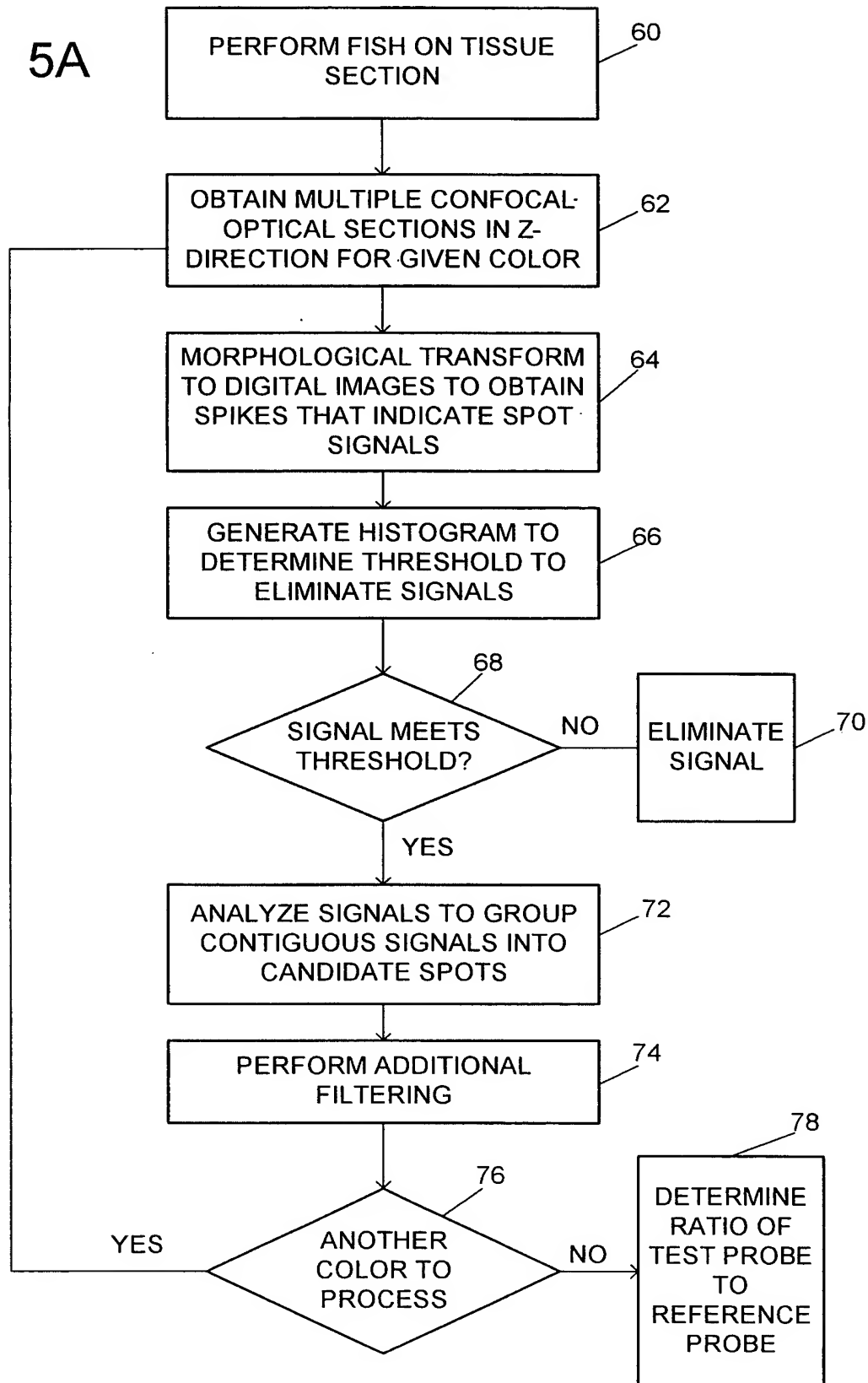


FIG. 4B

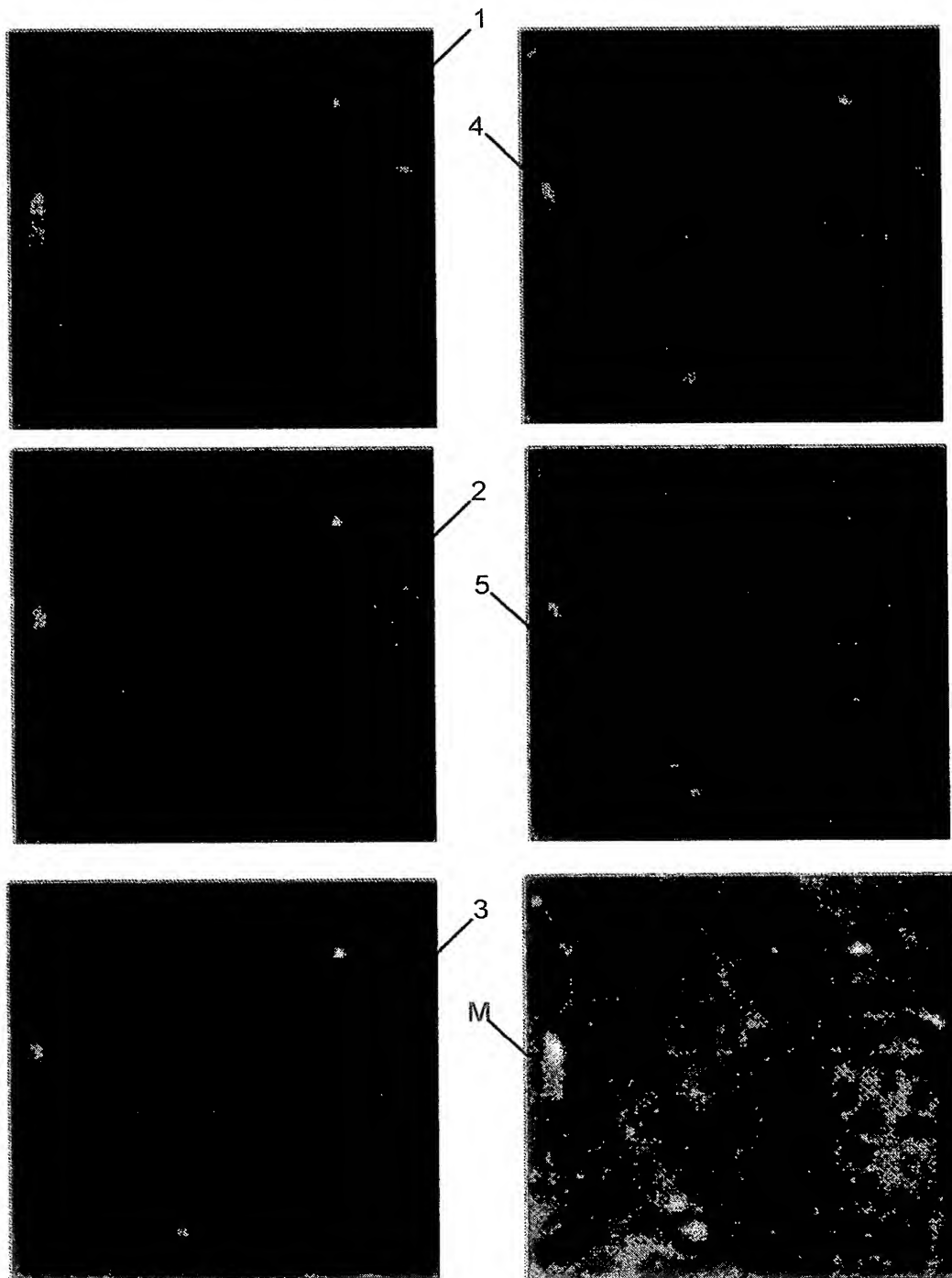
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FIG. 5A



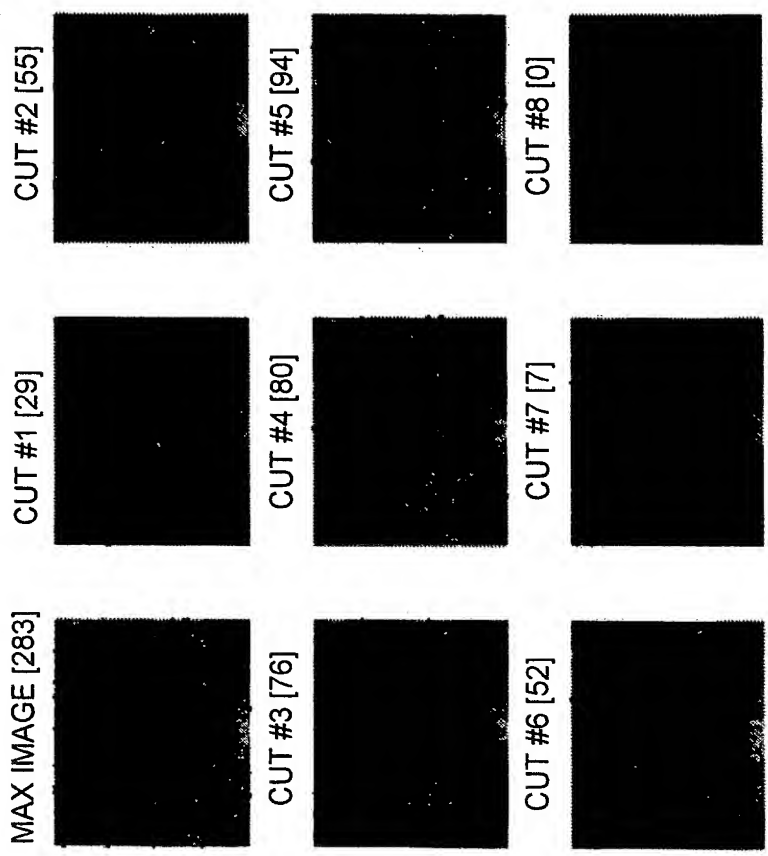
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FIG. 5B



AN EXAMPLE OF AUTOMATED FISH-SIGNAL COUNTING  
FROM A SERIES OF CONFOCAL IMAGES

FIG. 6A



STACK 7 FITC (T=21)

AUTOMATED SPOT  
COUNTING RESULTS:

TOTAL NUMBER OF SIGNALS COUNTED: 393  
- UNIQUE SIGNALS \*: 283

RESULTS FROM MANUAL COUNTING

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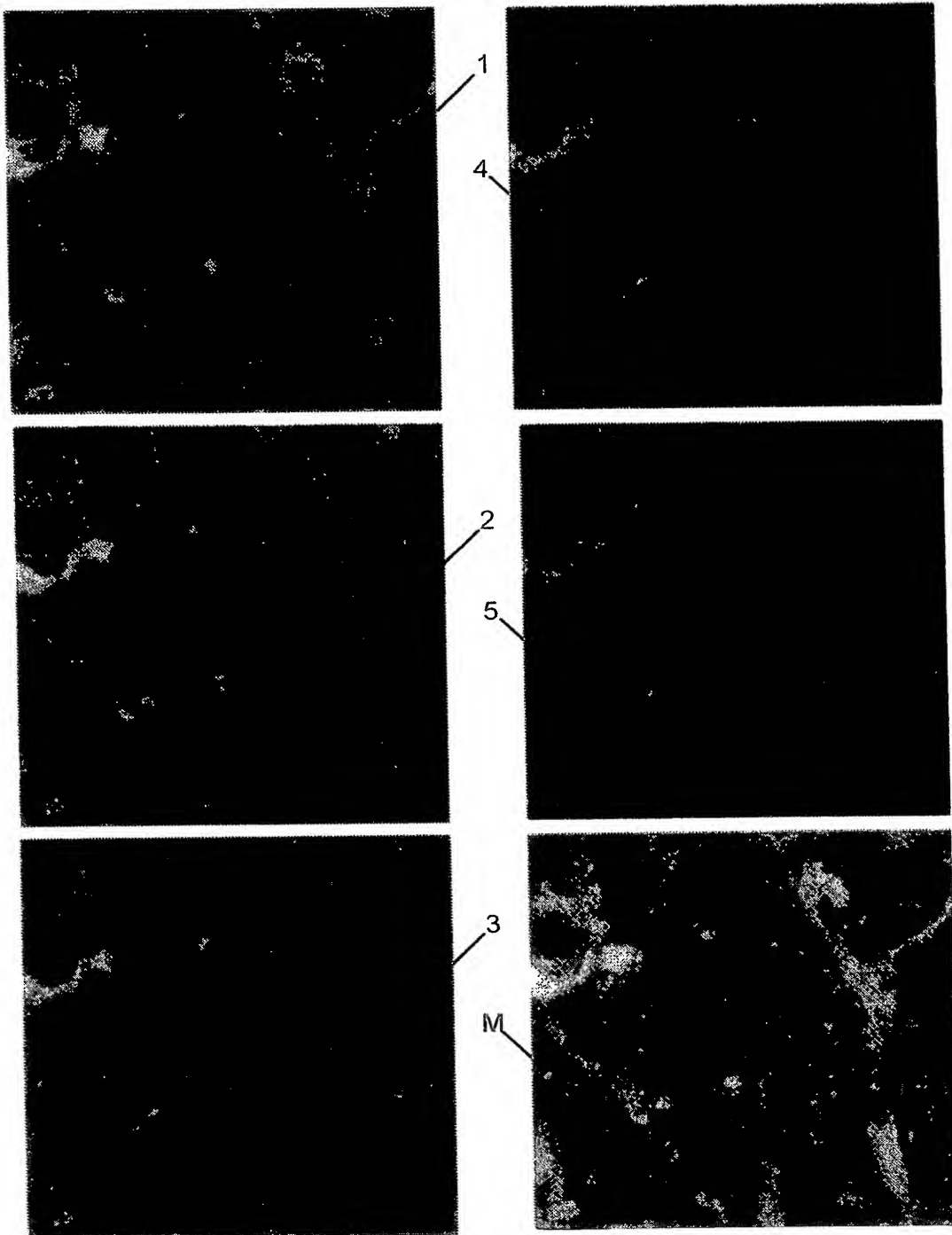
TOTAL NUMBER OF SIGNALS COUNTED: 391  
- UNIQUE SIGNALS : IMPOSSIBLE TO  
DETERMINE

\* FISH SPOT MAY APPEAR IN SEVERAL FOCAL LEVELS;  
THEREFORE, THE NUMBER OF UNIQUE SIGNALS IS LOWER  
THAN THE NUMBER OF ALL SIGNALS



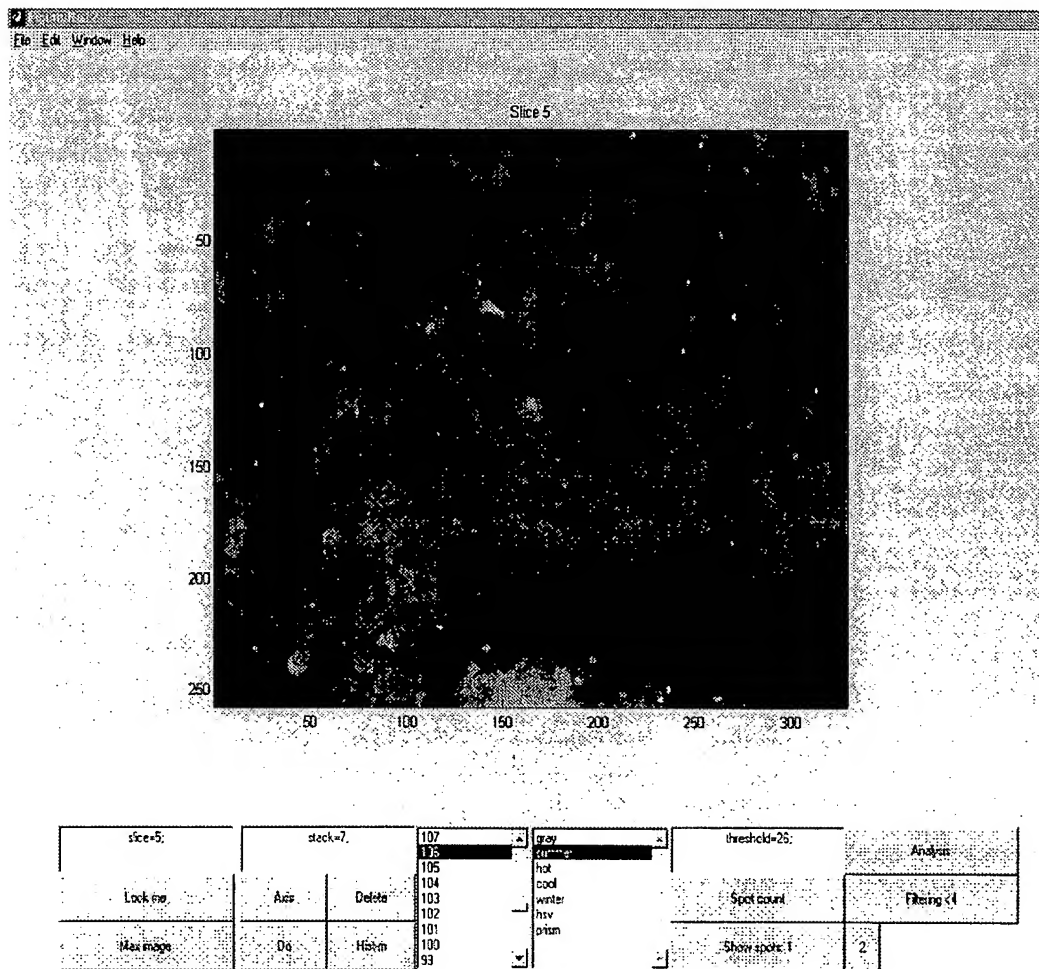
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FIG. 6B



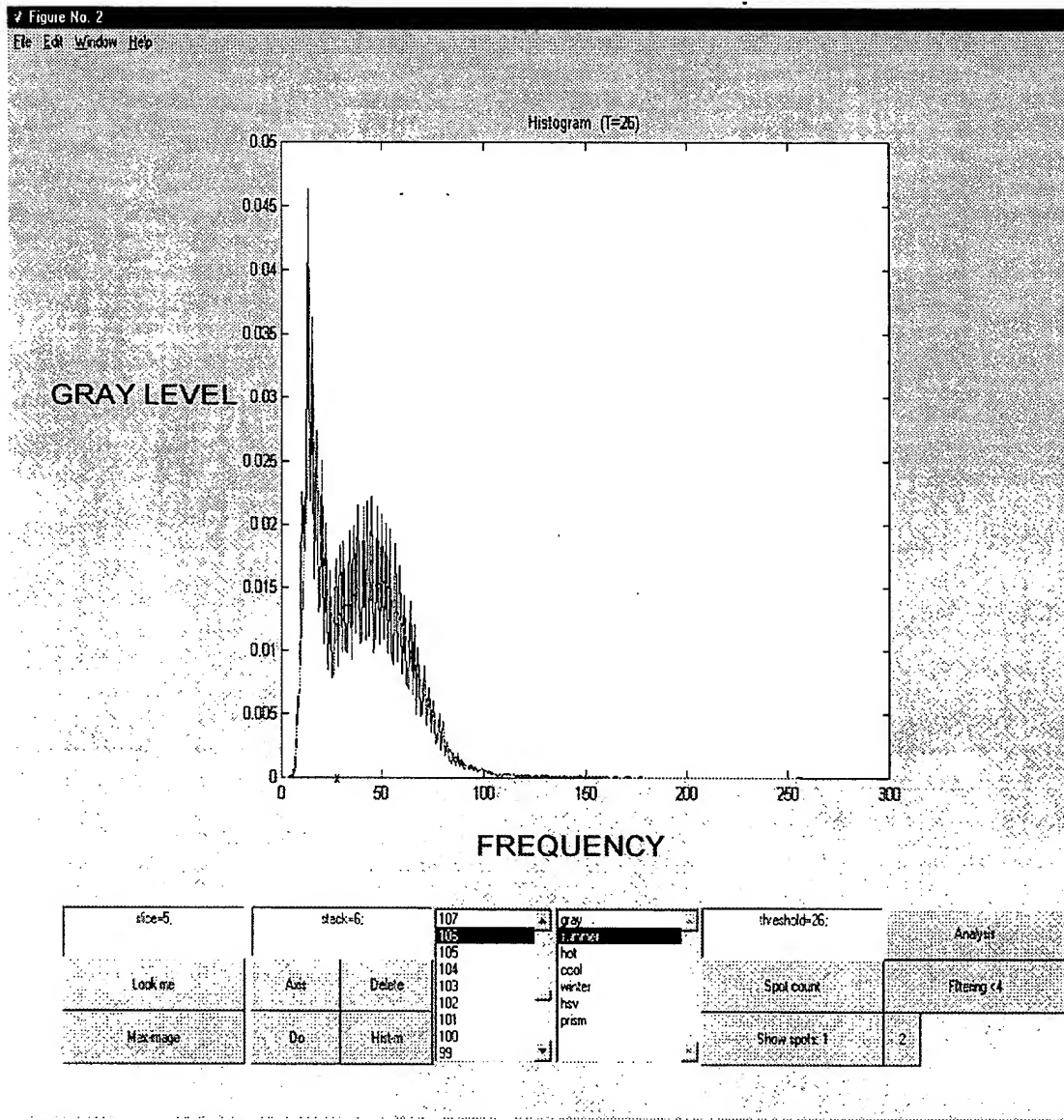
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FIG. 7



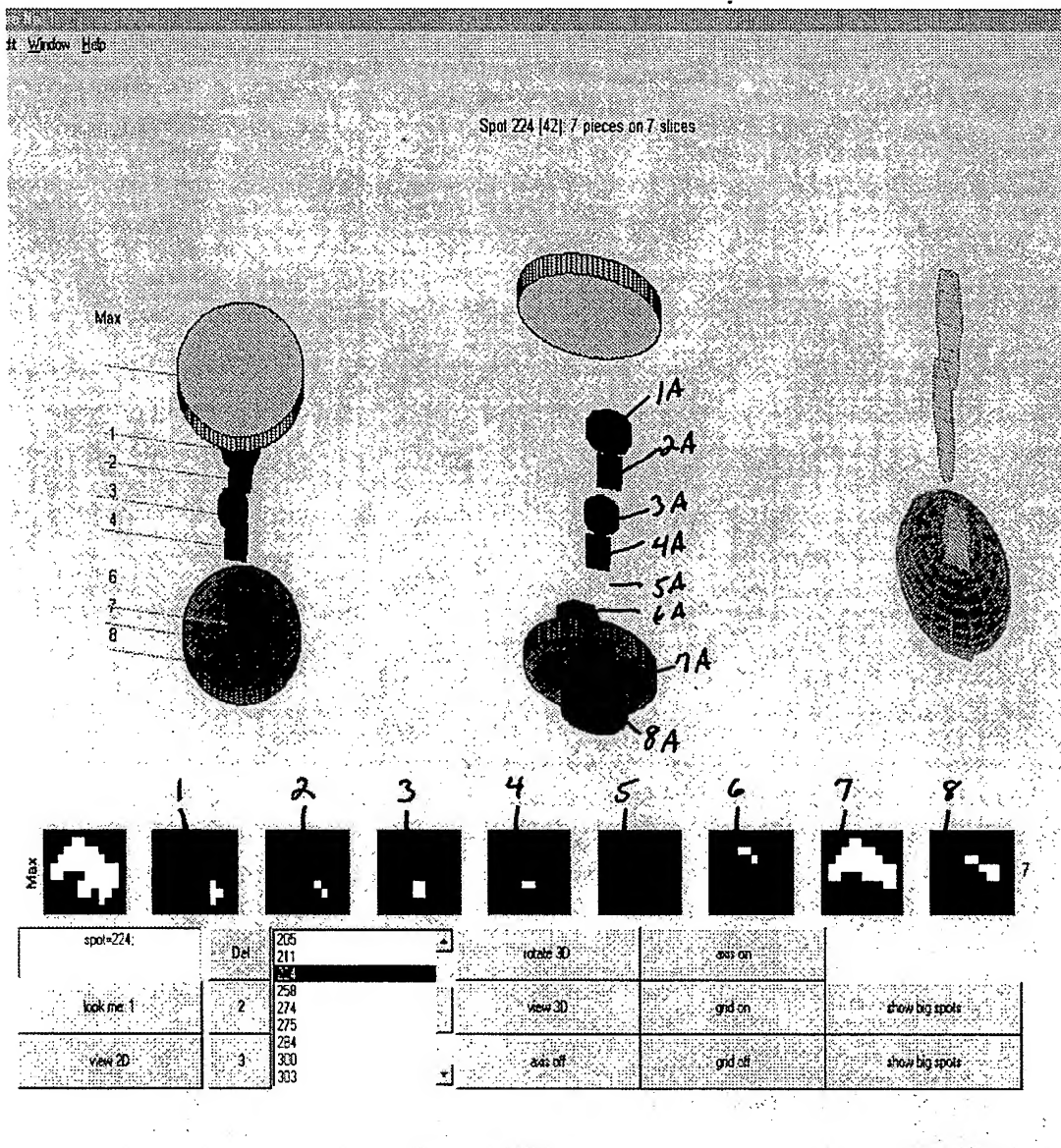
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FIG. 8



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FIG. 9A



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FIG. 9B

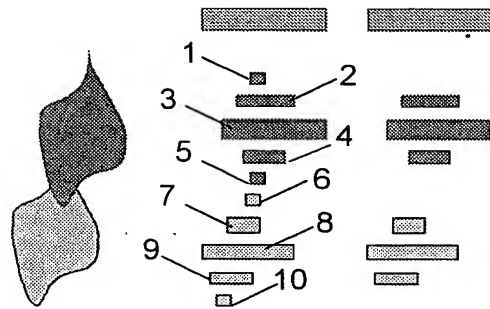
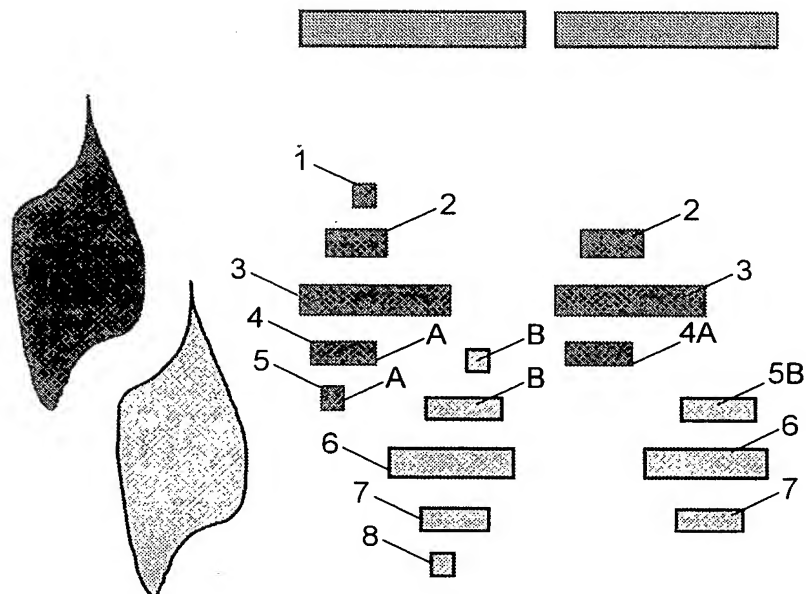
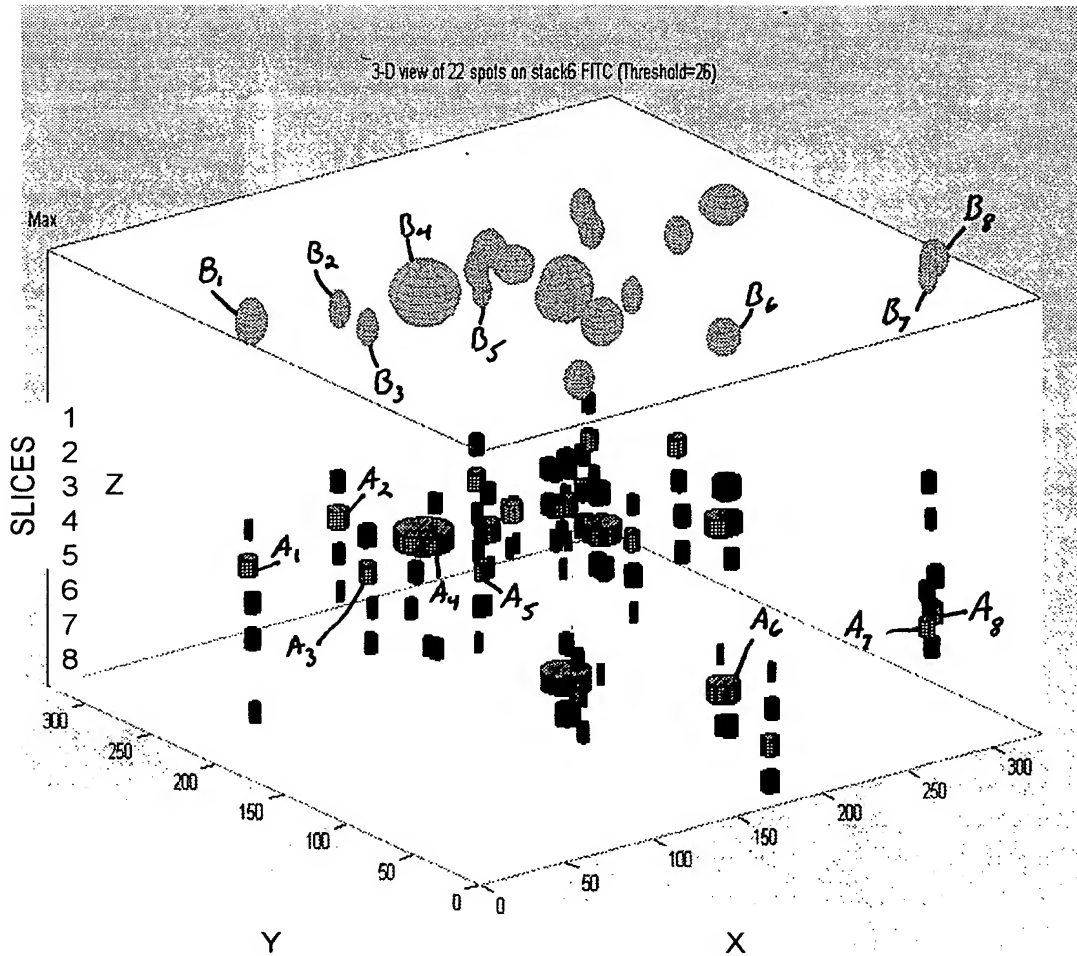


FIG. 9C



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FIG. 10



ROTATE 3D

VIEW 3

VIEW 2

GRID ON

GRID OFF

GO BACK

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FIG. 12

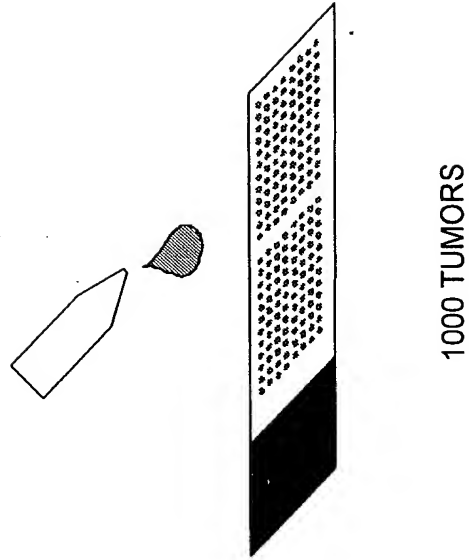
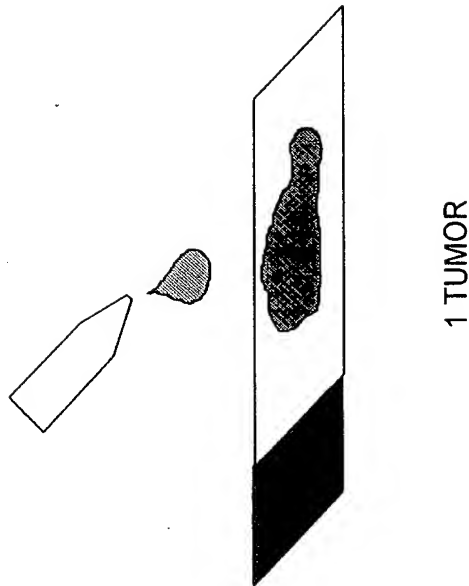
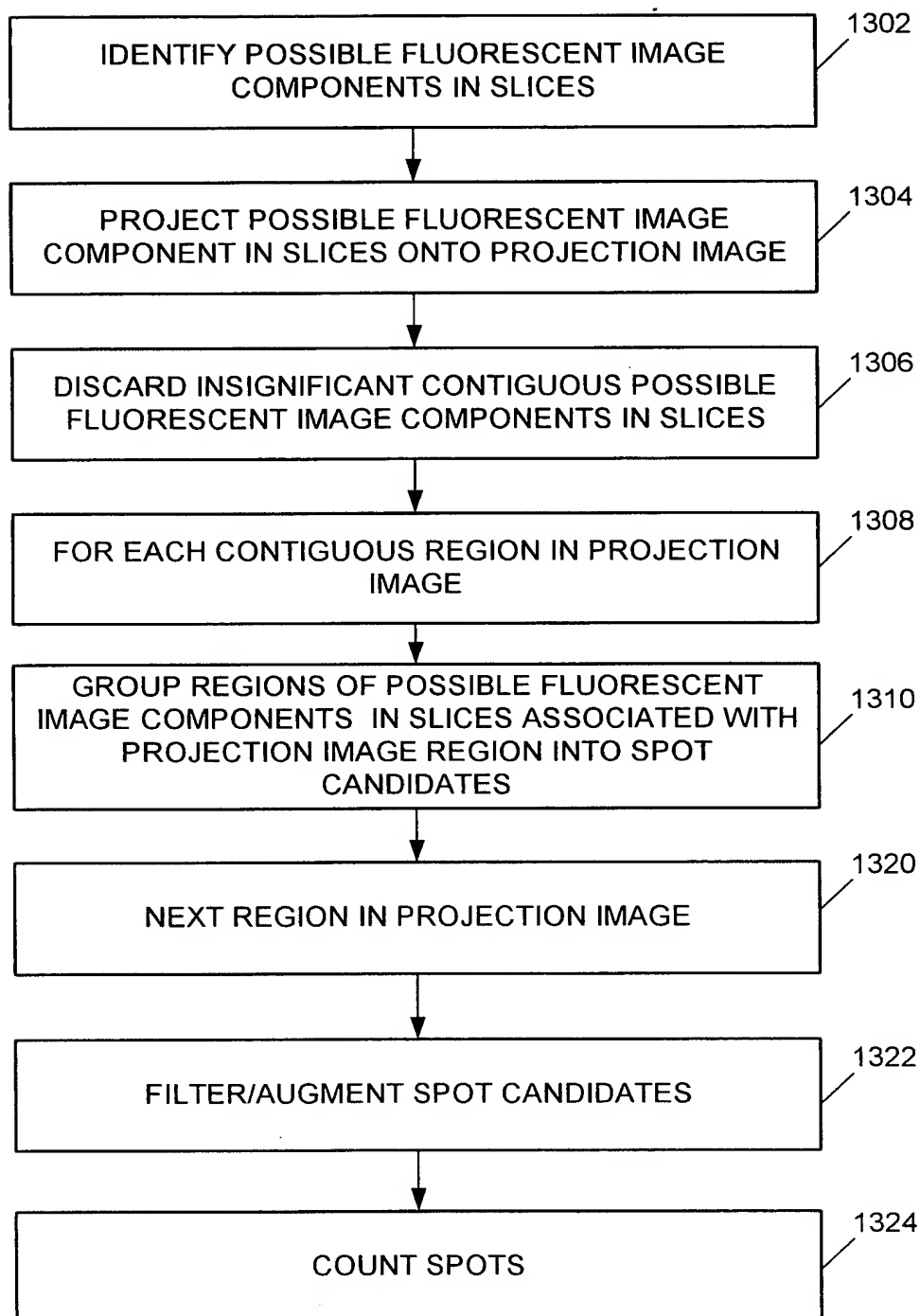


FIG. 11



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FIG. 13





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FIG. 14

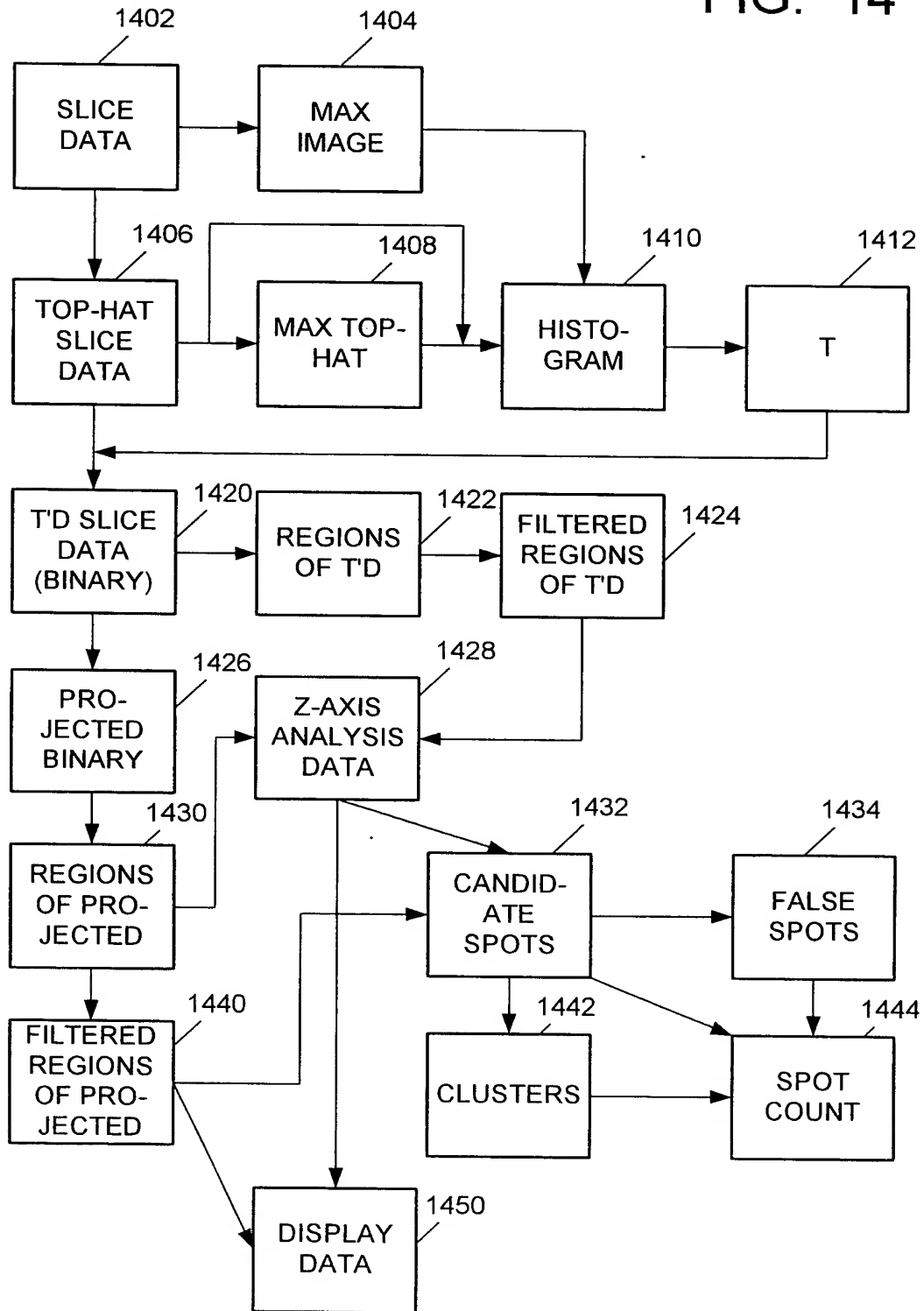


FIG. 15A



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FIG. 15B

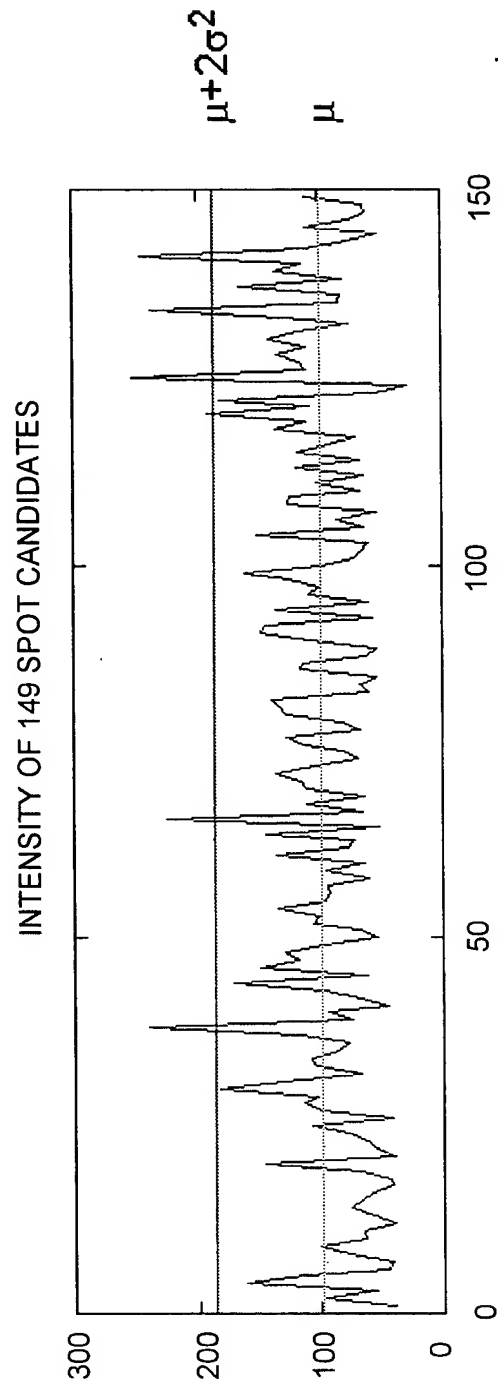


FIG. 15C

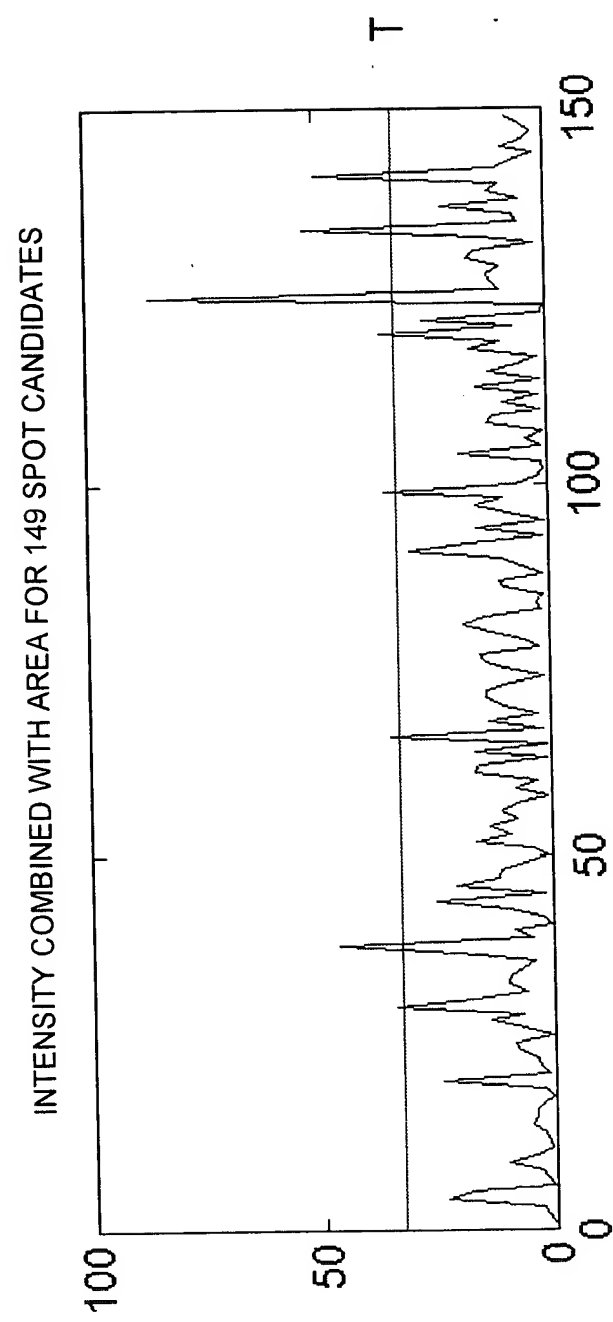
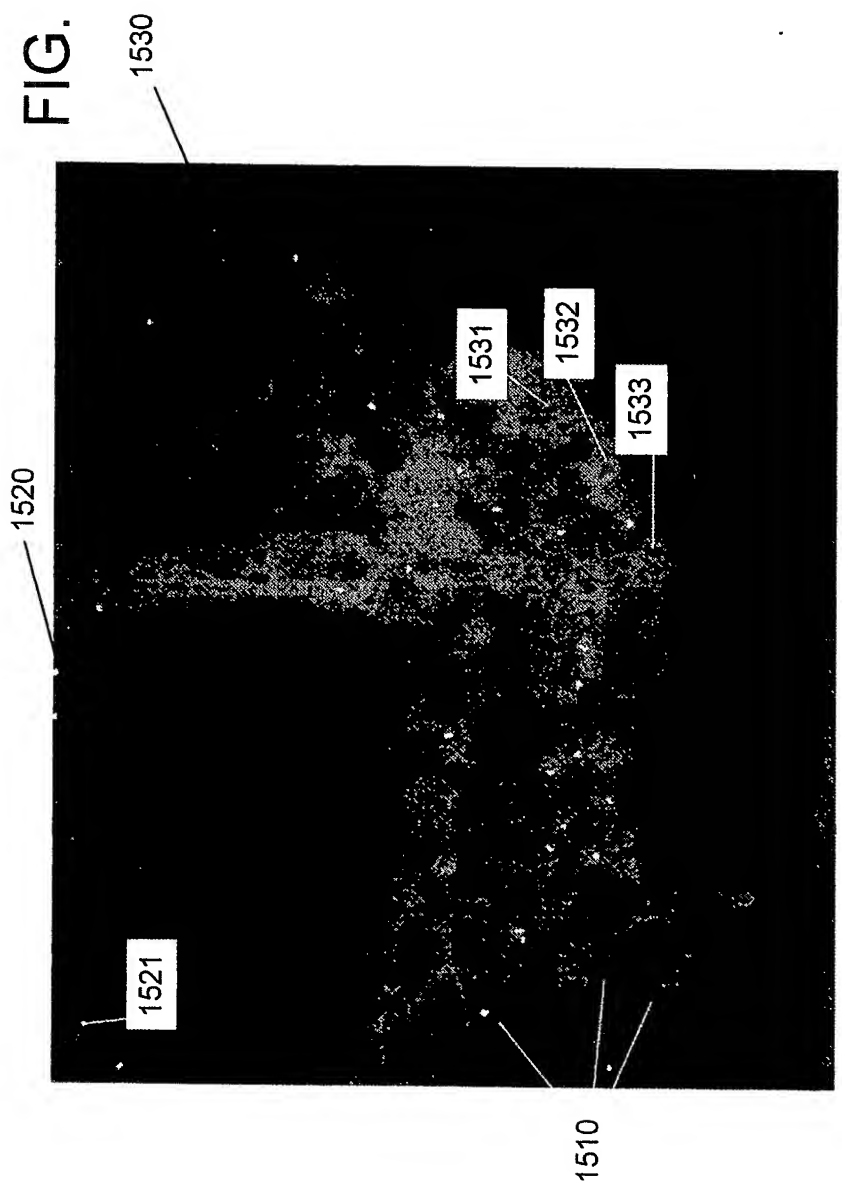


FIG. 15D



- true FISH signals
- small autofluorescent tissue particles
- large autofluorescent tissue particles

FIG. 16A

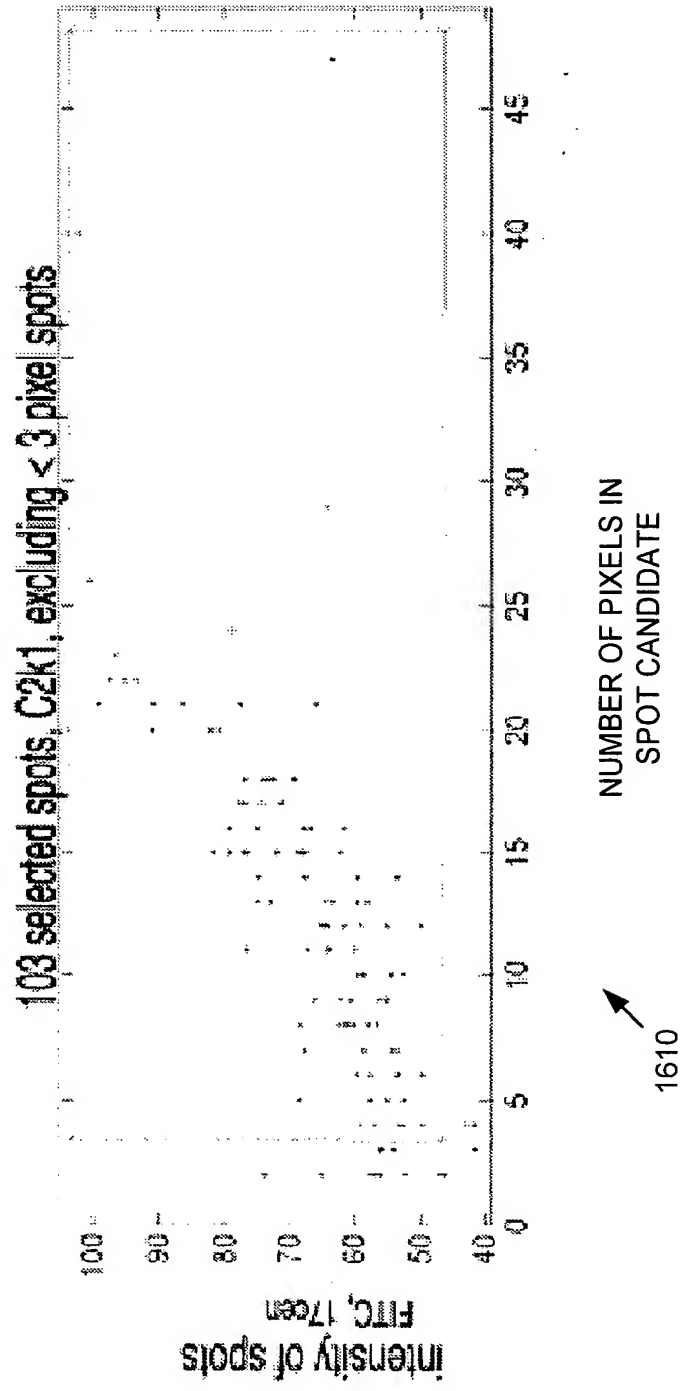


FIG. 16B

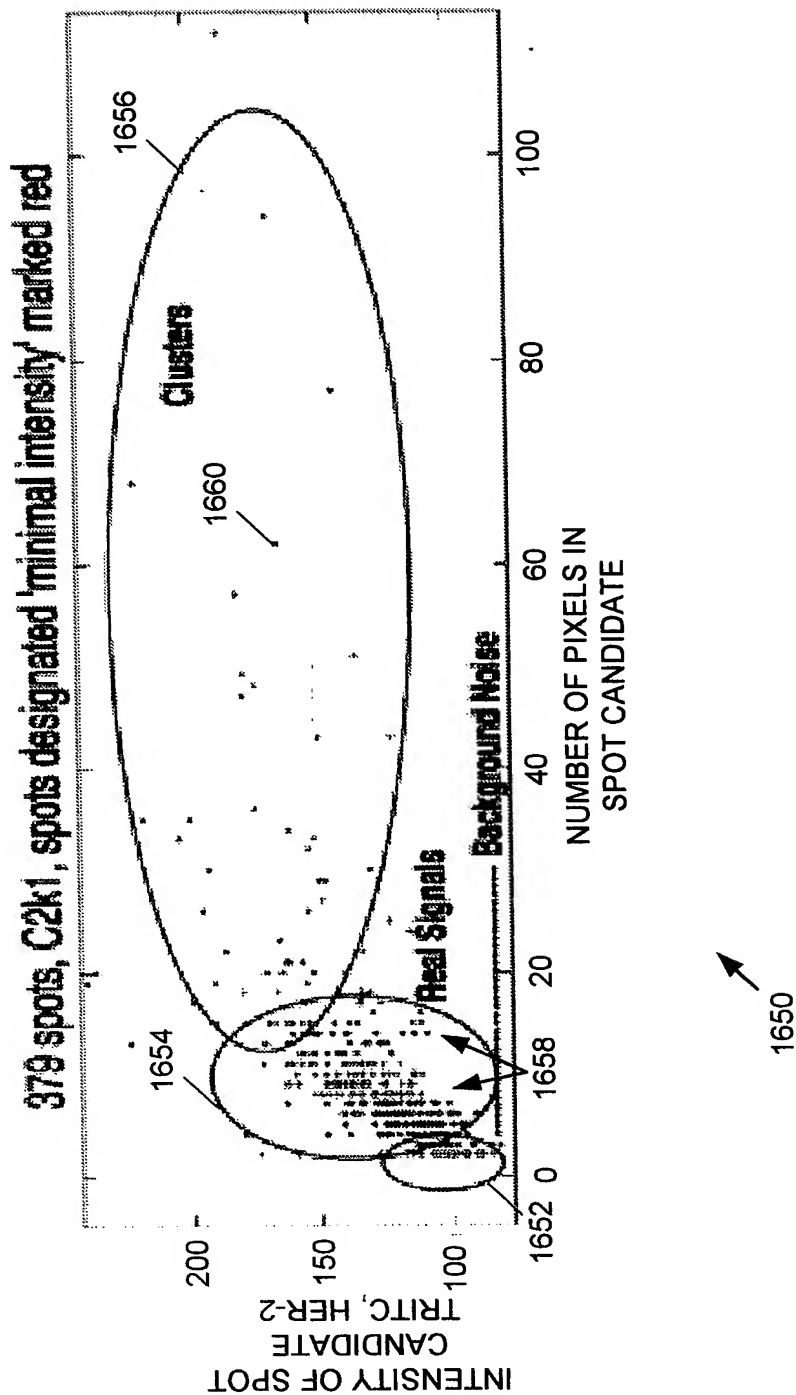


FIG. 17

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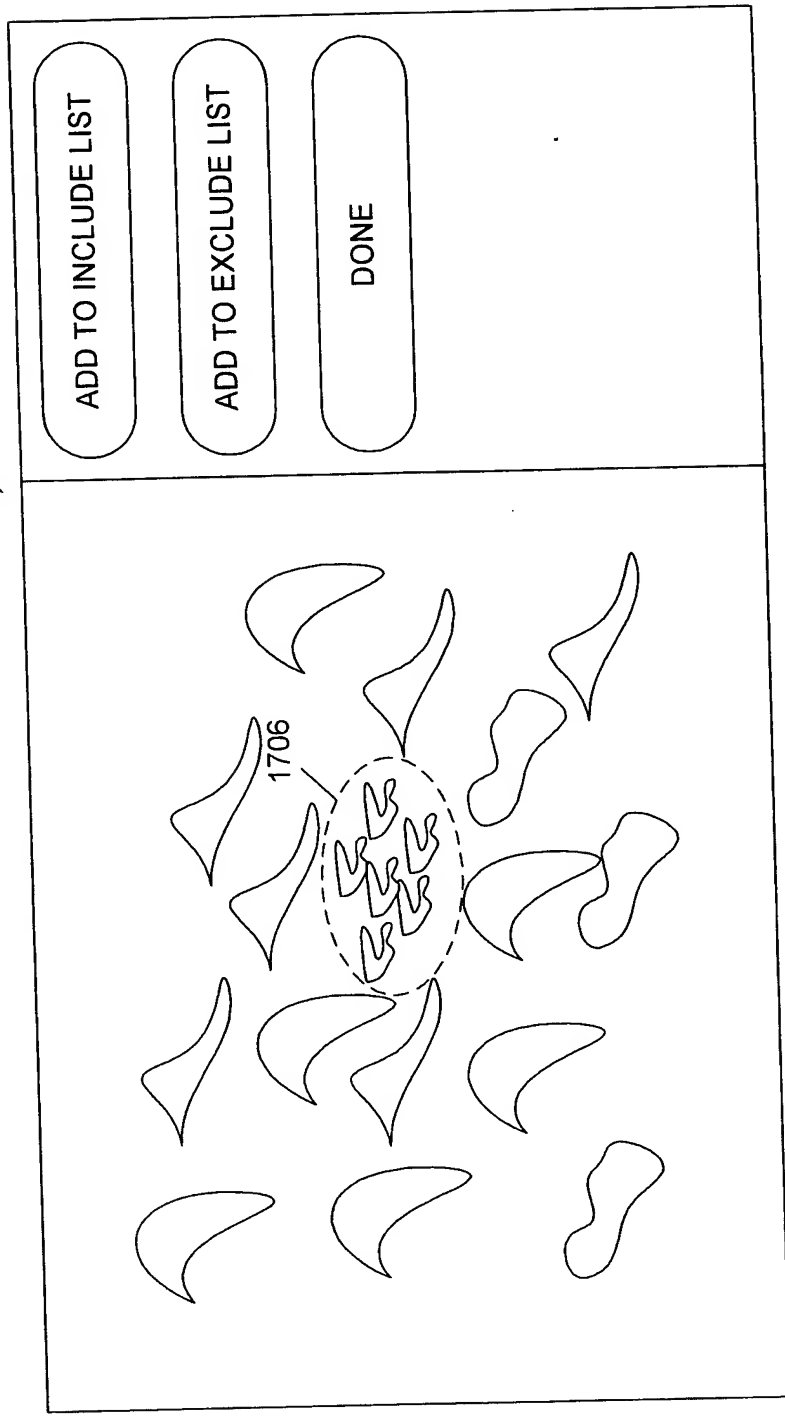




FIG. 18

